Defense Information Systems Agency

A Combat Support Agency

Cloud Computing: A perspective

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The Buzz

The Internet Industry Is on a Cloud – Whatever That May Mean
Wall Street Journal, March 26, 2009, A1

Federal CIO Scrutinizes Spending And Eyes Cloud Computing

Information Week, March 14, 2009

“Cloud Computing 'Something We Absolutely Have to Do‘”

- John Garing, CIO, DISA

“I had a customer tell me there’s a rainstorm coming, that there will be all these clouds and none are going to talk to each other.”

- Susan Adams, Chief Technology Officer, Microsoft Federal Civilian Practice

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Our World Today

Changes in the underlying platform enable Web 2.0 – blogs, wikis, social networking

- **Agility/flexibility of technology – implying a power shift**
- **Always on – ubiquitous**
- **Real time information and immediate feedback**
- **Provides**
  - **New distribution channels**
  - **Early warning through the blogosphere**
  - **Radical transparency**
  - **Dynamic, ad hoc sharing and collaboration**

Presenting challenges for the “institution”

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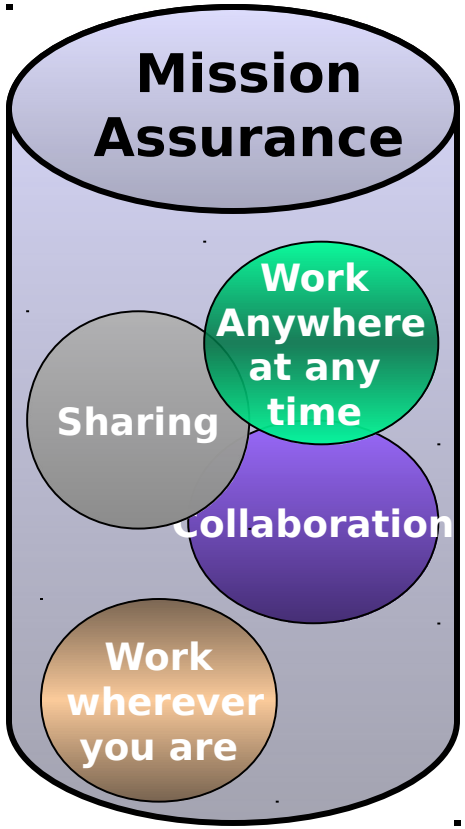
Congruent and Converging Forces …that compete

- **If you accept…**
  - **There is an unquenchable thirst for collaboration and sharing**
  - **We can work anywhere at any time – highly mobile workforce**
  - **You can work wherever you are – at home, traveling, etc.**

- **Then…**
  - **How do we achieve mission assurance on the same network?**
  - **How do we ensure the network is there when we need it?**
  - **What approach should we take?**



The Enterprise Never Relaxes

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"The Cloud"

A style of computing where massively scalable (and elastic) IT-related capabilities are provided "as a service" to external customers using Internet technologies.

What's new?

Acquisition Model: Based on purchasing of services	Business Model: Based on pay for use	Access Model: Over the Internet to ANY device	Technical Model: Scalable, elastic, dynamic, multi-tenant, & sharable

Source: Gartner

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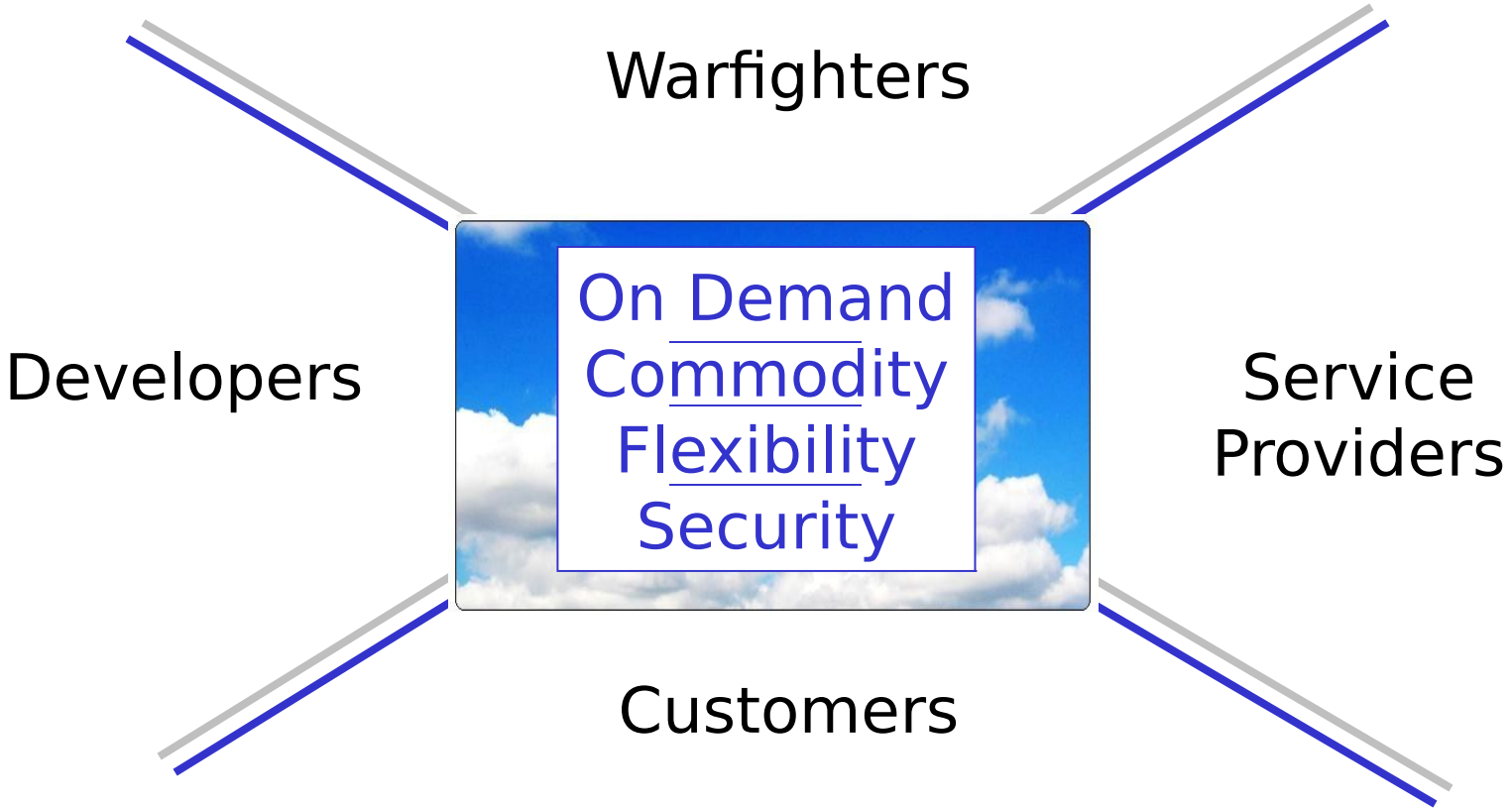
Changes In Consumption Patterns



Changes In Expectations

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Enabling the Cloud Environment

- **Infrastructure**
  - Consolidation
  - Global Information Grid
  - Capacity Services
  - Virtualization
  - Rapid Provisioning
  - Facility Analysis
- **Software**
  - Network-Centric Services
  - SAAS
  - Forge.mil
- **Processes**
  - ITIL
  - Security (Certification & Accreditation (C&A))
  - Computing Service

Multiple Technology Rivers Merging

DISA's Components to Cloud Computing

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- **Platform-As-A-Service (PaaS)**
  - Delivers a computing platform and/or solution stack as a service
  - Facilitates deployment of applications without the cost and complexity of buying and managing the underlying hardware and software layers
- **Infrastructure-As-A-Service (IaaS)**
  - The delivery of computer IasS, typically platform virtualization
  - For example:
    - Virtual desktops
    - Grid computing
- **Applications-As-A-Service (AaaS) /Software-As-A-Service (SaaS)**
  - Leverages the Cloud in software architecture
  - Eliminates the need to install and run the application on the customer's own computer
  - Type:
    - Commercial
    - Government

RACE
RAPID ACCESS COMPUTING ENVIRONMENT

Forge.mil

•Develops the SaaS Ecosphere
•Accelerates applications development

Independent But Complementary Activities

DISA RACE Drivers…Why Do It

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- **Support faster application development/deployment**
  - **Reduce hardware provisioning from months to hours**
  - **Provide standard platforms to encourage standardization**
  - **Developing under security guidelines reduces implementation delays to retrofit security**
- **Reduce development and operating cost**
  - **Self-service model reduces costs**
  - **Standardization reduces support costs**
  - **Centralizing resources in the cloud**
- **Improve overall security posture**
  - **No servers under desks**
  - **Secure facilities**
  - **Uniform application of security guidelines**

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RACE – The Solution

Increased Speed

- 24 hour provisioning
- Online self service
- Credit card acquisition

Increased Scalability

- Increase capacity ~ 24 hours
- "Turn On / Turn Off" monthly
- Capacity on demand

Reduced Risk

- No capital $ needed
- DECC Infrastructure
- Develop under DoD IA standards

Reduced Cost

- Pay only for what you need
- Month-to-month service
- No annual maintenance fees

RACE – How It Works

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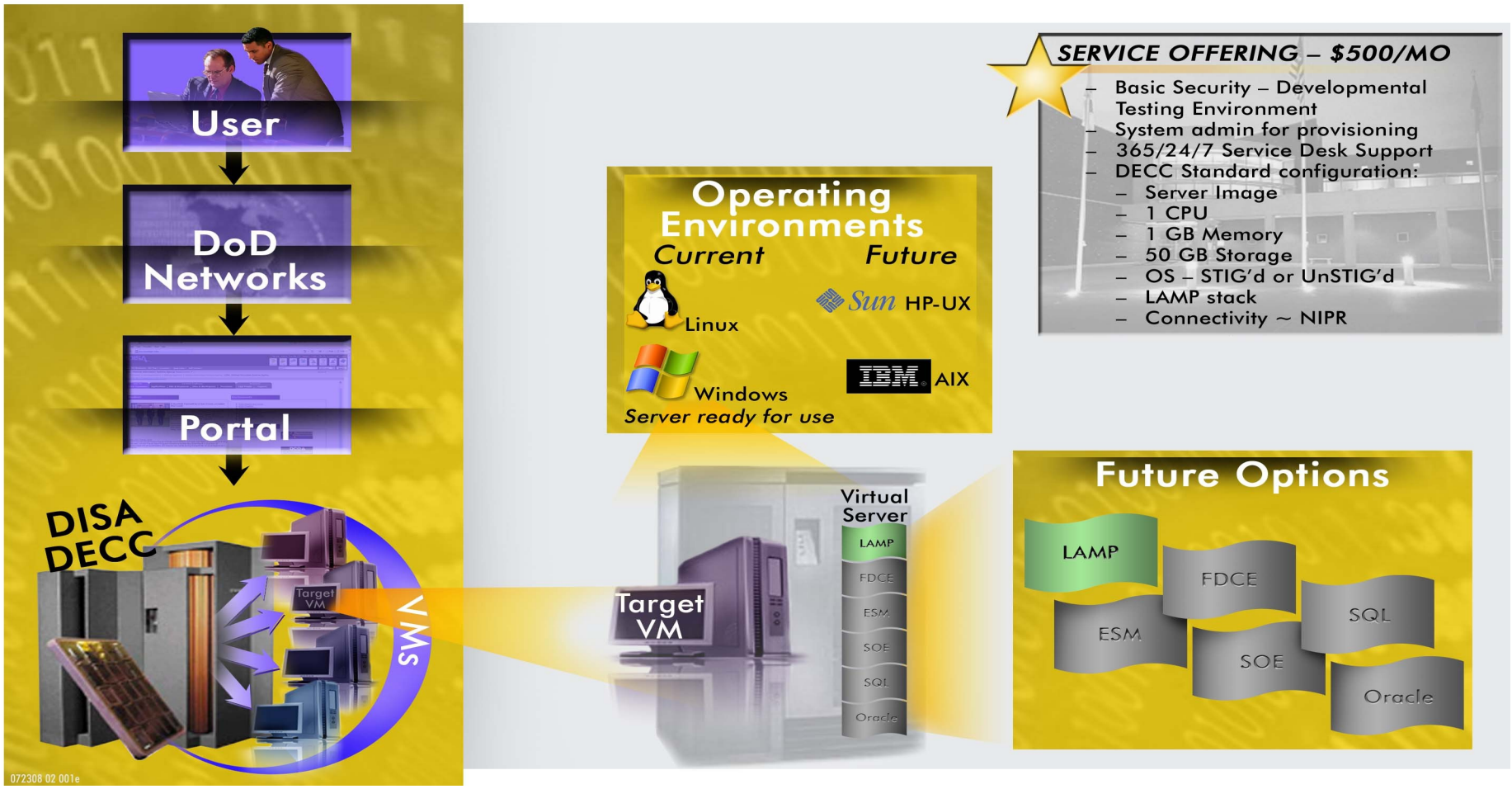

User Self-Service

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Forge.mil

- **Collaborative environment supporting the development and sharing of open source and community source software within the DoD**
- **Limited Operation Availability: January 23, 2009**
- **General Availability: March 27, 2009**

- **Common evaluation criteria and an agile certification process to accelerate the certification of reusable, net-centric solutions**
- **Limited Operational Availability: June 20, 2009**

- **On demand application development and lifecycle management tools provided buy DISA Computing Services Directorate on a fee-for-service bases for private project or program use**
- **Availability: TBD**

Bridging Developers & Operations To Foster The Cloud

RACE and Forge.mil
A complementary offering

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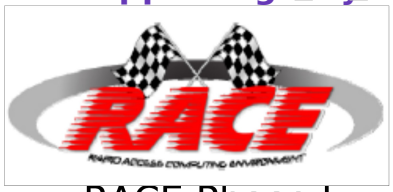

RACE Phase I

- **Acquire development server**
- **Develop application**
- **Developer Testing**

RACE Phase II

- **Certify and accredit application**
- **User Testing**
- **Store and share image**
- **Pre-production test and QA**

- **Free public code repository/library**
- **Find pre-existing source code**
- **Manage project lifecycle for public projects**
- **Share new code with others**
- **Collaborate with other DoD**

- **Fee-for-service private code repository/library (SaaS)**
- **Manage team efforts**
- **Manage project lifecycle for private projects**
- **Collaborate with team members**

Next Generation Of DISA Capabilities

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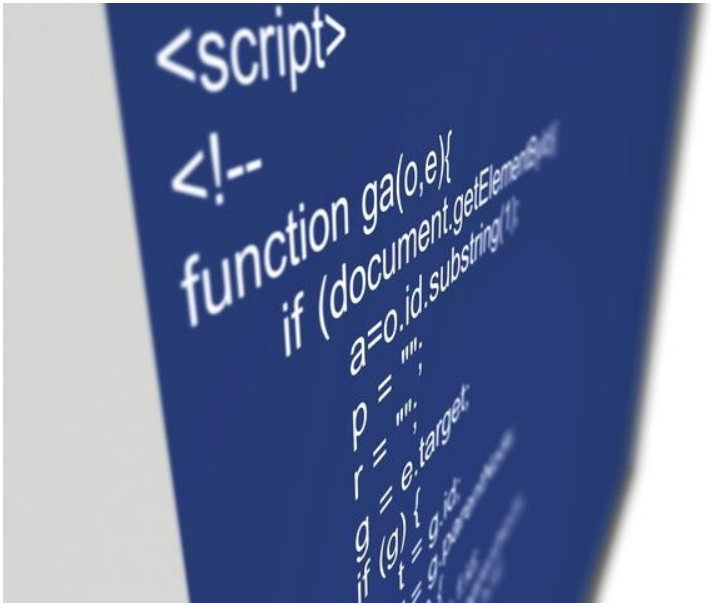
Software as a Service (SaaS)

Challenge

- **3M+ user baseline, continually changing and growing**
- **Dynamic requirements**
- **Software acquisition lead time**
- **Outyear capital projection for technology infusion**



SaaS Provider(s)

- **Manage software on “usage” basis**
- **Established negotiated prices**
- **Include future versions/releases**
- **Provide maintenance and patches**

Examples

- **Enterprise Email**
- **Host Based Security Solution**
- **Back-up & recovery**

Proposed RACE User Interface

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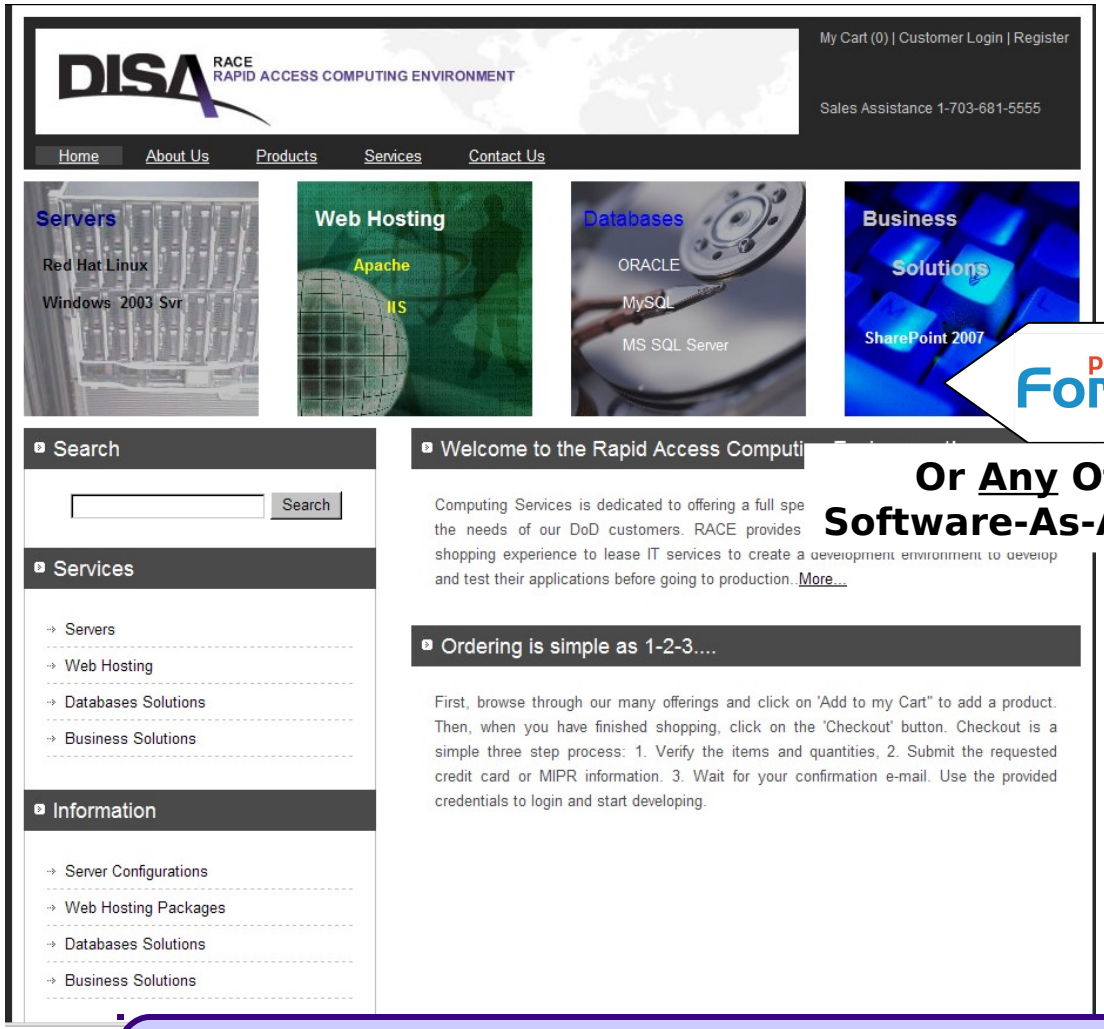

project Forge .mil

Or Any Other Software-As-A-Service

- **Software.Forge becomes a NCES-like offering**
- **Project.Forge becomes a SAAS offering**

RACE is a User Self-Service Portal for CSD services

RACE Is The User Entry Point For Service Offerings

Challenges and Barriers

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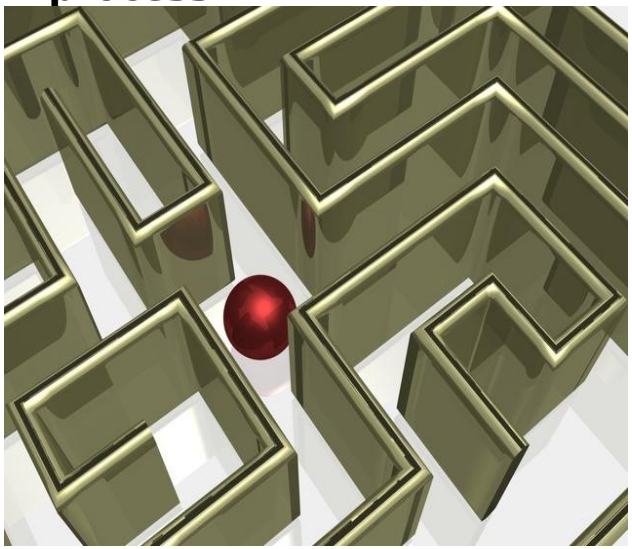
Current

- **Balancing Security and Usability**
  - User Validation
  - Virtualization; servers, firewalls, networks
  - Access
- **Business processes**
  - Flexible funding; credit cards, speeding MIPR process
- **Cultural inertia**
  - Sharing the vision
  - Convincing “Box Huggers”
- **Controlling expectations**
  - “Why can’t it…..”



Future

- **Security optimization**
  - “Shared” accreditation
  - Validation of customer applications
  - Integrating Software as a Service
  - Accessing federated and shared services
  - Varying interpretations of security guidelines
- **Business streamlining**
  - Each Service and Agency has unique processes
  - Funding hurdles; Procurement $ verses Operating $

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Clouds - Complexity With A Promise Of ….

A Simple Idea

User:
- Builds a web application,
- Using a standard platform
- Using a standard database
- Upload this application to a cloud provider
- Only pays for what s/he uses when s/he needs it.
- **Everything else is an implementation detail.**

Cloud provider automatically
- Provisions the services
- Scales the application and the database together

Clear Tenets

Application Flexibility
- Standardized
- Increasing “click to run” services
- Live in remote Internet data centers
- Scalable to millions

Procurement
- Efficient
- Rapid
- Commoditized
- “Pay by the sip”

Security
- Simplified
- Streamlined

Multi-faceted Enablement

Infrastructure
- Consolidation
- Global Information Grid
- Capacity Services
- Virtualization
- Rapid Provisioning
- Facility Analysis

Software
- Network-centric Services
- Saas
- Forge.mil

Processes
- ITIL
- Security (C&A)
- Computing Service Provider (CSP)

It’s A Journey

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